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Although reproductive control presently is the fashionable, "politically correct" concept to managing overabundant wildlife populations, such control may only be appropriate for certain species. Understanding the population dynamics of vertebrate pest species is critical to developing appropriate strategies for managing populations. We developed a simple model incorporating reproductive and survival rate data to simulate gull (*Larus* spp.), blackbird (*Agelaius phoeniceus*), black rat (*Rattus rattus*) and other vertebrate populations subjected to various levels of lethal and reproductive control. Simulations indicate gull populations can be reduced 3-4 times more efficiently by killing adults than by interfering with reproduction (e.g., egg oiling). For example, an annual control program that kills 50% of the adult gulls will reduce the population by 90% after 4 years whereas eliminating 50% of the reproduction will reduce the population by only 25%. Thus, gull population management strategies, which have traditionally focused on reproductive control, should be reexamined to consider lethal control. In contrast to the situation for gulls, reproductive control and lethal control bring about similar levels of population reduction for blackbirds, and reproductive control is far superior to lethal control for black rats. Thus, rodent population management strategies, which have traditionally focused on the use of rodenticides (lethal control), should be reexamined to consider the development of reproductive control strategies.